



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,545	01/07/2002	Hyo Sik Shin	P-0328	4850

34610 7590 10/22/2004

FLESHNER & KIM, LLP  
P.O. BOX 221200  
CHANTILLY, VA 20153

EXAMINER

ZEWDU, MELESS NMN

ART UNIT	PAPER NUMBER
----------	--------------

2683

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/036,545

Applicant(s)

SHIN ET AL.

Examiner

Meless N Zewdu

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 20-37 and 40-48 is/are rejected.
- 7) ☒ Claim(s) 18, 19, 38 and 39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2, 4 and 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

1. This action is the first on the merit of the instant application.
2. claims 1-48 are pending in this action.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

**As per claim 1:** Flint discloses a mobile electronic equipment/laptop (fig. 3A) with an internal/integrated antenna (fig. 3A; element 330; col. 4, lines 5-9), comprising:

Art Unit: 2683

a case having an opened portion (see figs. 1-4 and 6-7; abstract; col. 1, lines 46-56); a display panel exposed through the opened portion of the case for displaying text or images reads on '400 (see figs. 1-4 and 6-7; abstract; col. 1, lines 46-56). The figures show a foldable case comprising a display and a keyboard. Flint also discloses an electrically conductive panel frame for supporting edges of the display panel, and being positioned within the case reads on '400 (see col. 1, line 46-col. 2, line 30). Flint discloses, a display panel provided with supporting frame which also is used as ground for the antenna wherein the ground frame is conductive. Furthermore, Flint discloses an antenna fastened to the panel frame for enabling a radio communication, the antenna being grounded to the panel frame in a state of being inserted in the case reads on '400 (see 3A, elements 330; col. 1, line 46-col. 2, line 30; col. 4, lines 5-10). The disclosure shows a display metal frame (fig. 3A, element 350) to which a metal support comprising an embedded antenna is attached.

**As per claim 2:** Flint discloses the antenna comprises:

a grounding portion in conductive contact with to the panel frame reads on '400 (see figs. 3A and 9; col. 3, line 63-col. 4, line 9).

a cable fixing portion positioned in parallel with and spaced at a distance from the grounding portion reads on '400 (see figs. 9 and 10; col. 1, lines 45-56; col. 2, lines 21-30; col. 3, line 63-col. 4, line 9). Cable fixing portion isn't a word of invention and spaced apart is a relative term. To avoid these ambiguous words examiner suggests applicant show the embodiment of the 'cable fixing portion'. As the feature

Art Unit: 2683

stands now, the coaxial cable connection to the antenna disclosed in the prior art can be considered as a cable fixing portion.

a connecting portion connecting the grounding portion and the cable fixing portion reads on '400 (see col. 1, lines 45-56; col. 2, lines 22-30). The metal frame is used as a ground.

**As per claim 4:** the equipment, wherein the cable fixing portion includes a transmitting and receiving portion extended long in a longitudinal direction of the antenna at one side thereof reads on '400 (see col. 1, lines 45-56; col. 2, lines 22-30; col. 3, line 63-col. 4, line 9).

**As per claim 5:** the equipment, further comprising a coaxial cable with an outer shield conductor connected at one end thereof to the cable fixing portion and a center conductor thereof connected to a communication control device of the equipment reads on '400 (see col. 3, line 63-col. 4, line 9).

**As per claim 6:** the equipment, wherein the coaxial cable is disposed to pass between the grounding portion and the cable fixing portion of the antenna reads on '400 (see figs. 9 and 10; col. 1, line 45-col. 2, line 30).

**As per claim 7:** the equipment, wherein the cable fixing portion of the antenna includes a first junction portion where the center conductor of the coaxial cable is connected and a second junction portion where the outer shield of the coaxial cable is connected reads on '400 (see figs. 9 and 10; col. 3, line 63-col. 4, line 9).

Art Unit: 2683

**As per claim 8:** the equipment, wherein a hole is formed at one end of the grounding portion, through which engaging members fix the antenna to the panel frame reads on '400 (see fig. 3A, elements 340; col. 3, line 63-col. 4, line 9).

**As per claim 9:** Flint discloses a laptop, wherein the width of the antenna is the same as or the smaller than that of the panel frame (see fig.4; col. 3, lines 15-41; col. 4, lines 9-31). Slotted antenna is antenna with a hole for the antenna to be inserted therein. As shown in the various figures in Flint's reference, the slots are placed on/in the edges of the display frame.

**As per claim 10:** Flint discloses an embedded antenna wherein the length of the antenna is the same as or smaller than that of the panel frame (see figs. 3-8; col. 4, lines 5-31).

**As per claim 11:** Flint discloses a laptop device, wherein the panel frame includes a side wall formed to surround a side face of the display panel, and the antenna is put in contact with the side wall of the panel frame at the side face of the display panel (see figs. 37, particularly fig. 3A, element 350; col. 4, lines 5-9).

**As per claim 12:** Flint discloses a laptop equipment, wherein the case includes a radio communication control device electrically connected to the antenna and an input key which can be operated for inputting by a user (see abstract; col. 1, line 46-col. 2, line 30).

**As per claim 13:** the equipment, further comprises a bracket for fixing the panel frame to the case, and the grounding portion of the antenna is inserted between the bracket and the panel frame reads on '400 (see fig. 3A; col. 1, line 45-col. 2, line 30; col. 3, line

Art Unit: 2683

63-col. 1, line 9). According to the prior art the display panel cased in a case which in turn is surrounded by a metal frame serving as ground is further supported by a pair of metal elements/brackets (for both sides) having embedded antenna. Hence, this arrangement puts the frame/ground between the display case and the supporting metals/brackets.

**As per claim 14:** the equipment, wherein the antenna is mounted to the panel frame by a plurality of brackets at both sides of the display panel and grounded to the panel frame reads on '400 (see fig. 3A; col. 1, line 45-col. 2, line 30; col. 3, line 63-col. 4, line 9).

**As per claim 15:** the equipment, further comprising a bracket for fixing the panel frame to the case, the bracket being made of metal and installed to be closely adhered to the panel frame, and wherein the antenna is fixed at one side of the bracket reads on '400 (see fig. 3A; col. 3, line 63-col. 4, line 9).

**As per claim 16:** the equipment, wherein the bracket includes an antenna fixing portion protruded from a portion thereof closely adhered to the panel frame so that the antenna can be fixed reads on '400 (see col. 3, line 63-col. 4, line 9). The embedded antenna of the prior art has protrusion/connection means to the panel frame for being grounded.

**As per claim 20:** the equipment, further comprising a main body including a key board which can be operated by a user and a radio communication control device electrically connected to the antenna, and wherein the case is rotatably coupled so as to be folded to the main body or unfolded from the main body reads on '400 (see figs. 3-4; abstract; col. 1, line 45-col. 2, line 30).

Art Unit: 2683

**As per claim 21:** the equipment, wherein an antenna is installed at each side of the display panel reads on '400 (see figs. 3A, elements 330; col. 3, lines 34-41).

**As per claim 22:** the equipment, further comprising a bracket with one side thereof fixedly contacted with a side wall of the panel frame and another side thereof fixed at an inner wall of the case reads on '400 (see fig. 3A; col. 9, line 63-col. 4, line 9). The two metal supports can be considered brackets.

**As per claim 23:** the equipment, wherein the grounding portion of the antenna is disposed between the panel frame and the bracket reads on '400 (see fig. 3A; col. 1, line 45-col. 2, line 30; col. 3, line 63-col. 1, line 9). According to the prior art the display panel cased in a case which in turn is surrounded by a metal frame serving as ground is further supported by a pair of metal elements/brackets (for both sides) having embedded antenna. Hence, this arrangement puts the frame/ground between the display case and the supporting metals/brackets.

**As per claim 24:** the equipment, wherein the panel frame includes a screw fixing hole, and the bracket and the antenna each include holes through which a screw may be inserted formed therein at positions thereof corresponding to the screw fixing hole of the panel frame, so that the bracket and the antenna may be fixed to the panel frame by the screw reads on '400 (see fig. 3A, elements 340; col. 3, line 63-col. 4, line 9).

**As per claim 25:** the equipment, wherein the antenna comprises:

a grounding portion in electrical contact with the panel frame reads on '400 (see figs. 3A and 9; col. 3, line 63-col. 4, line 9).



Art Unit: 2683

a cable fixing portion positioned in parallel with the grounding portion and spaced therefrom reads on '400 (see figs. 9 and 10; col. 1, lines 45-56; col. 2, lines 21-30; col. 3, line 63-col. 4, line 9). Cable fixing portion isn't a word of invention and spaced apart is a relative term. To avoid these ambiguous words examiner suggests applicant show the embodiment of the 'cable fixing portion'. As the feature stands now, the coaxial cable connection to the antenna disclosed in the prior art can be considered as a cable fixing portion.

a connecting portion connecting the grounding portion and the cable fixing portion reads on '400 (see col. 1, lines 45-56; col. 2, lines 22-30). The metal frame is used as a ground.

**As per claim 26:** The equipment, wherein the cable fixing portion includes a transmitting and receiving portion at one side thereof, extended in a longitudinal direction of the antenna reads on '400 (see col. 1, line 45-col. 2, line 30). The signal processing device of the prior art includes transmission and reception portion. The prior art also provides different types of antenna orientations.

**As per claim 27:** the equipment, further comprising a coaxial cable with one end connected to the cable fixing portion and the other end connected to the communication control device in the main body reads on '400 (see figs. 9 and 10; col. 1, line 45-col. 2, line 30; col. 3, line 63-col. 4, line 9).

**As per claim 28:** the equipment, wherein the coaxial cable is installed to pass between the grounding portion and the cable fixing portion reads on '400 (see figs. 9 and 10; col. 1, line 45-col. 2, line 30).

**As per claim 29:** the equipment, wherein the coaxial cable fixing portion includes a first junction portion where a center conductor wire of the coaxial cable is connected and a second junction portion where an outer shield of the coaxial cable is connected reads on '400 (see figs. 9 and 10; col. 3, line 63-col. 4, line 9).

**As per claim 30:** the equipment, further comprising a bracket for fixing the panel frame to the case, the bracket being made of metal and installed to be closely adhered to the panel frame, and wherein the antenna is fixed at one side of the bracket reads on '400 (see fig. 3A; col. 3, line 63-col. 4, line 9).

**As per claim 31:** the equipment, wherein the bracket includes an antenna fixing portion protruded from a portion thereof closely adhered to the 1 s panel frame so that the antenna can be fixed thereto reads on '400 (see col. 3, line 63-col. 4, line 9). The embedded antenna of the prior art has protrusion/connection means to the panel frame for being grounded.

**As per claim 33:** the equipment, further comprising a coaxial cable with one end connected to the communication control device in the main body and the other end connected to the antenna, so as to transmit a transmission or reception signal between the communication control device and the antenna reads on '400 (see col. 1, lines 45-56; col. 2, lines 22-30; col. 3, line 63-col. 4, line 9).

**As per claim 35:** a mobile electronic equipment comprising:

a main body including a main lower case on which a key board is

Art Unit: 2683

positioned, a printed circuit board installed at the main lower case and connected to a communication control device, and an upper case coupled to the main lower case reads on '400 (see figs. 3-4; col. 1, line 45-col. 2, line 30). The word 'key board' isn't mentioned in the reference. However, it is clear from (figs. 3-4) that the prior art discloses a housing, for a portable electronic device, comprising a display section and a key board section.

a display unit supported by the main body to be rotatable between a first position where the key board is covered and a second position where the key board is uncovered reads on '400 (see figs. 3-4; abstract; col. 1, line 45-col. 2, line 30). The device disclosed in the prior art is a laptop which is capable of rotating between closing and open positions.

the display comprising, a cover outer case constituting a cover of the display unit and having a bottom wall and a side wall reads on '400 (see figs. 3-4). An outer cover for the featured display is shown from the figures.

a display panel mounted at the cover outer case and having a panel frame is installed at edges thereof, the panel frame having a side wall reads on '400 (see figs. 3-4; col. 1, line 45-col. 2, line 3).

a bracket with one side thereof fixedly connected with a lateral edge of the panel frame of the display panel and with a fixing portion fixed to the side wall of the cover outer case formed at another side thereof reads on '400 (see fig. 3A, elements 330; col. 4, lines 3-9). Elements 330 of fig. 3A can be considered as brackets.

an antenna having a grounding portion and a transmitting and receiving portion,

Art Unit: 2683

the grounding portion being fixedly connected with the bracket reads on '400 (see col. 3, line 63-col. 4, line 9). The prior art antenna embedded in the metal support/bracket (elements 330) has a conductive connection to the display frame which is used as a ground. Hence, the connection between the frame and the supporting metals is a ground connection to which the bracket is apart.

**As per claim 36:** The equipment, wherein a pair of antennas are installed, one at each side of the display panel reads on '400 (see col. 1, lines 31-39; col. 3, lines 34-40).

**As per claim 37:** the equipment, wherein the panel frame includes a screw fixing hole being formed at a side wall of the panel frame, and holes are respectively formed at the bracket and the grounding portion of the antenna corresponding to the screw fixing hole, whereby a screw can be passed the screw fixing hole and the holes of the bracket and the grounding portion simultaneously s to fix the bracket and the antenna to the panel frame reads on '400 9see fig. 3A; elements 340; col. 3, line 63-col. 4, line 9).

**As per claim 40:** the equipment, further comprising a coaxial cable with one end connected to the transmitting and receiving portion and the other end connected to the communication control device, and wherein the cable is passed between the grounding portion and the transmitting and receiving portion of the antenna reads on '400 (see fig9-10; col. 1, lines 45-56). The signal processing device of the prior art includes transmitting and receiving portion of the antenna and the frame provides grounding means for the antenna. The cable connecting these parts should pass between them.

**As per claim 41:** a mobile electronic equipment having a main body which contains a communication control device and a display unit with a display panel supported s by a

Art Unit: 2683

panel frame made of metal reads on '400 (see figs. 34; col. Col. 1, lines 45-56; col. 2, lines 22-30), the equipment comprising:

an outer case having a bottom wall supporting the display panel and perpendicularly a side wall at an edge of the bottom wall to surround the display panel reads on '400 (see figs. 3-4; col. 1, line 45-col. 2, line 30);

a bracket fixed to the panel frame to support the display panel, with which bracket a case fixing portion is integrally formed for fixing at the outer case reads on '400 (see fig. 3A, elements 330; col. 4, lines 3-9). Elements 330 of fig. 3A can be considered as brackets.

an antenna fixed at an antenna fixing portion formed at the bracket for transmitting and receiving a signal to and from an external source '400 (see col. 1, line 45-col. 2, line 30; col. 6, lines 15-26).

a coaxial cable with one end connected to the communication control device and the other connected to the antenna, for transmitting a transmission and is a reception signal between the communication control device and the antenna reads on '400 (see col. 1, lines 45-56; col. 2, lines 22-30; col. 3, line 63-col. 4, line 9).

**As per claim 43:** the equipment, wherein the coaxial cable is electrically connected to the antenna and the antenna fixing portion reads on '400 (see col. 1, lines 45-56; col. 2, lines 22-39; col. 3, line 63-col. 4, line 9).

Art Unit: 2683

**As per claim 44:** a mobile electronic equipment comprising:

a main body including a main lower case on which a key board is positioned, a printed circuit board installed at the main lower case and connected to a communication control circuit, and an upper case coupled to the main lower case, reads on '400 (see figs. 3-4; col. 1, line 45-col. 2, line 30). The word 'key board' isn't mentioned in the reference. However, it is clear from (figs. 3-4) that the prior art discloses a housing, for a portable electronic device, comprising a display section and a key board section.

a display unit supported by the main body to be rotatable between a first position where the key board is covered and a second position where the key board is uncovered reads on '400 (see figs. 3-4; abstract; col. 1, line 45-col. 2, line 30). The device disclosed in the prior art is a laptop which is capable of rotating between closing and open positions.

the display unit comprising, a cover outer case constituting a cover of the display unit and having a bottom wall and a side wall reads on 400 (see figs. 3-4). An outer cover for the featured display is shown from the figures.

a display panel mounted in the cover outer case and having a panel frame installed at edges thereof, the panel frame having a side wall reads on '400 (see figs. 3-4; col. 1, line 45-col. 2, line 3).

a bracket with one side thereof fixedly connected with the side wall of the panel frame, and having a case fixing portion protruded at another side thereof so that the bracket can be fixed at the side wall of the outer case, an antenna fixing

Art Unit: 2683

portion being formed at the other side of the bracket reads on '400 (see fig. 3A, elements 330; col. 4, lines 3-9). Elements 330 of fig. 3A can be considered as brackets.

an antenna fixed at the antenna fixing portion of the bracket for enabling a Is radio communication reads on '400 (see col. 3, line 63-col. 4, line 9). The prior art antenna embedded in the metal support/bracket (elements 330) has a conductive connection to the display frame which is used as a ground. Hence, the connection between the frame and the supporting metals is a ground connection to which the bracket is apart.

a coaxial cable with one end connected thereof to the communication control circuit and another end thereof connected to the antenna, so as to transmit a transmission and a reception signal between the communication control device and the antenna reads on '400 (see col. 1, lines 45-56; col. 2, lines 22-30; col. 3, line 63-col. 4, line 9).

**As per claim 45:** an antenna for radio communication installed in mobile electronic Equipment reads on '400 (see col. 1, line 45-col. 2, line 30); comprising:

a grounding portion grounded to a metal member in the mobile electronic equipment reads on '400 (see col. 1, lines 45-56);

a cable fixing portion formed in spaced parallel relation to the grounding portion reads on '400 (see col. 3, line 47-col. 4, line 9).

an end of a coaxial cable connected to a communication control device of the mobile electronic equipment being electrically connected thereto reads on '400 (see col. 1, lines 45-56); and

Art Unit: 2683

a connecting portion connecting the grounding portion and the cable fixing portion reads on '400 (see figs. 8-9; col. 1, lines 45-56). The metal frame is the ground. Furthermore, cable, antenna and ground connection shown in figs. 8-9 can be considered as a connecting portion.

**As per claim 47:** the antenna, wherein the cable fixing portion includes a transmitting and receiving portion extended from one edge thereof in a longitudinal direction of the antenna reads on '400 (see col. 1, line 45-col. 2, line 30). The signal processing device of the prior art includes transmission and reception portion. The prior art also provides different types of antenna orientations.

**As per claim 48:** the antenna, wherein the cable fixing portion includes is portions for connecting to a center conductor and an outer shield of the coaxial cable reads on '400 (see col. 4, lines 2-9).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flint in view of Oka (US 6,441,791 B1).



Art Unit: 2683

**As per claim 3:** but, Flint does not explicitly teach about an antenna that is formed of a metal plate bent in a 'U' shape, and the grounding portion, the connecting portion and the cable fixing portion are integrally formed with one another, as claimed by applicant. However, in a related field of endeavor, Oka teaches about a U-shaped antenna that is connected to a coaxial cable and ground in coordinated manner (see abstract; col. 1, line 61-col. 2, line 21; col. 3, line 32-46). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to replace Flint's antenna with Oka's U-shaped antenna for the advantage of resonating two different frequencies thereby avoiding the need for the use of a switch between the two frequencies that are used for transmitting and receiving. Note: Oka's antenna is glass made. However, it is well known in the art to use metal antennas. Examiner treats the use by applicant of a metal antenna as a choice made by a designer.

**As per claim 46:** the feature of claim 46 is similar to the feature of claim 3. Hence, claim 46 is rejected on the same ground and motivation as claim 3.

Claims 17 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flint as applied to the claims above, and further in view of Sawamura et al. (Sawamura) (US 6,362,792 B2).

**As per claim 17:** with regard to claim 17, Flint discloses an antenna fixed to the bracket at the antenna fixing portion (see fig. 3A; col. 3, line 63-col. 4, line 9). But, Flint does not explicitly teach about an antenna that is formed in a plate shape, as claimed by applicant. However, in a related field of endeavor, Sawamura teaches about an antenna element made of thin plate-like material to be used in a cellular telephone and also as a

Art Unit: 2683

replacement for helical antennas (see col. 1, lines 6-8; col. 40, lines 17-26). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to replace or modify Flint's antenna with that of Sawamura for the advantage of preventing the upsizing of the housing case of electronic devices (laptop or cellular telephone).

**As per claim 32:** the feature of claim 32 is similar to the feature of claim 17. Hence, claim 32 is rejected on the same ground and motivation as claim 17.

Claims 34 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flint as applied to the claims above, and further in view of MacDonald, Jr. et al. (MacDonald) (US 5,809,403).

**As per claim 34:** but, Flint does not explicitly teach about a bracket that includes a cable supporting portion protruded from a portion thereof closely adhered to the panel frame, for supporting the cable, as claimed by applicant. However, in a related field of endeavor, MacDonald teaches about coaxial cable assembly technique for a portable phone, wherein the coaxial cable is shaped to extend through the support bracket assembly (see abstract; col. 2, lines 25-41; col. 5, line 56-col. 6, line 20). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Flint's system by that of MacDonald's for the advantage of protecting the coaxial cable from bend stress, as taught by MacDonald (see summary).

**As per claim 42:** the feature of claim 42 is similar to the feature of claim 34. Hence, claim 42 is rejected on the same ground and motivation as claim 34.

***Allowable Subject Matter***

Claims 18, 19, 38 and 39 are would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Note: these claims are objected in view of the intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N Zewdu whose telephone number is (703) 306-5418. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2683

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Meless Zewdu

*M-Z*

Examiner

15 October 2004.

*W. Trost*

WILLIAM TROST  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600